MATH 1160: ELEMENTARY APPLIED CALCULUS

Spring Semester 2016

Instructor – Dr. Charles Y. Kang

CRN	Days	Time	Course Num/Sec	Classroom Location
12984	MW	2:00-3:15 PM	MATH 1160/51	D237

A Course in the General Education Program

Program Description: The General Education Program at KSU offers a common academic experience for all its students. In a series of interrelated courses in the liberal arts and sciences, it provides the opportunity for them to acquire the intellectual skills and knowledge characteristic of educated persons in a diverse, global community. Thus, it lays the foundation for success in their academic, professional, and personal arenas. Whereas the major program contributes depth to a college education in a designated specialization, the General Education Program provides breadth of understanding by providing an introduction, connection, and integration to a variety of disciplines needed by educated persons.

Program Goals: The General Education Program at KSU has four goals. During the course of the program, students should achieve the following:
- Demonstrate knowledge and understanding of general education disciplines.
- Demonstrate proficiency in communication.
- Demonstrate skills in inquiry, critical thinking, analysis, and problem solving through scholarly and/or creative activity across the general education disciplines.
- Demonstrate an understanding of ethics, diversity, and a global perspective.

MATH 1160 satisfies one of Kennesaw State University's general education program requirements. It addresses the Applied Math learning outcome. This learning outcome states:

> **Applied Math**: Students will demonstrate an ability to effectively apply symbolic representations to model and solve problems.

For more information about KSU's General Education program requirements and associated learning outcomes, please visit the topic "University-Wide Degree Requirements" in the KSU Undergraduate Catalog.

General Education Assessment Study:

Kennesaw State University is currently engaged in a campus-wide assessment of its general education program. The purpose is to measure student achievement with respect to faculty defined student learning outcomes. This course has been selected to participate in the process. No individually-identifiable student information will be collected as part of the assessment. Data will be reported only in aggregated form. Students should know that the data may be used for scholarly work by members of KSU faculty (but only in anonymous and aggregated form). If you are opposed to having your anonymous data used for scholarly work, you can "opt out" of this specific aspect of the process.

For more information on the general education assessment process and for access to an "opt out" form, please click

http://kennesaw.edu/curriculum/gen-ed-assessment.html

Course Description:

MATH 1160 - Elementary Applied Calculus
3 Class Hours 0 Laboratory Hours 3 Credit Hours

Prerequisite: A grade of "C" or better grade in MATH 1111, MATH 1112 or MATH 1113.

Uses techniques of college algebra and elementary calculus to analyze and model real world phenomena. The emphasis will be on applications using an intuitive approach to the mathematics rather than formal development. Topics include graphs, derivatives, and integrals of functions. The course incorporates collaborative learning, oral and written reports, and technology.

Expected Learning Outcomes:

1. The student will demonstrate an understanding of the relationship between slope, average rate of change, instantaneous rate of change, and the derivative.
2. The student will demonstrate an understanding of the numeric, graphical and algebraic determination of limits.
3. The student will be able to find the derivative of a function using the appropriate technique from the following: power rule, product rule, quotient rule, chain rule.
4. The student will be able to find relative minimums and/or maximums, absolute minimums and/or maximums and the inflection point using differentiation.
5. The student will be able to find the derivative of exponential and logarithmic functions.
6. The student will be able to solve application problems involving optimization, elasticity of demand, exponential growth, and exponential decay using the concepts of differentiation.
7. The student will demonstrate an understanding of the relationship between the derivative and the definite integral of a function.
8. The student will be able to use the Fundamental Theorem of Calculus to determine the definite integral of a function.
9. The student will be able to calculate the area between two curves using the definite integral.
10. The student will be able to solve application problems involving average value, present value, future value, consumers' surplus and producers' surplus using the definite integral.

Instructor Information and Policies for this course

Instructor: Dr. Charles Y. Kang
E-mail: ykang4@kennesaw.edu
(Please indicate <u>Math 1160</u> in the subject line)
Phone: 470-578-3423
Webpage: http://facultyweb.kennesaw.edu/ykang4
Office: D234
Office Hours: MW 3:20 – 3:50pm, TR 5:40 – 6:30pm, or by appointment

Textbook*: Calculus and Its Applications, 11th Edition,* by Marvin L. Bittinger, David Ellenbogen, and Scott Surgent.

Calculator: Calculators may NOT be used on tests or class work, unless instructed otherwise. If allowed, you may use the following family or calculators: TI-83, TI-83+, or TI-84. It is the responsibility of the student to learn the ins and outs of his/her own calculator.

Online Resource: MyMathLab (includes access to the complete eText version of *Calculus and Its Applications, 11th Edition*).

Homework and Classwork: Homework will be assigned regularly and will be done via MyMathLab. New books purchased at the KSU and General bookstores should come bundled with a subscription to MyMathLab. Anyone just wanting to purchase the subscription to MyMathLab (without purchasing the textbook) can either purchase a MyMathLab registration code at the bookstore, or present their plastic online at the MyMathLab website (www.mymathlab.com) to subscribe.

Instructor's MyMathLab Course ID: kang14157

There will be classwork to be done and turned in during most classes. The dates for classwork may NOT be announced, so please attend all lectures.

Tests: There will be a total of three (3) tests throughout the semester (not counting the final exam). All tests are mandatory, but your lowest test percentage will be replaced by the final exam percentage.* At most one make-up test may be allowed *at the instructor's discretion.* Its request must be made with valid documented reasons, and, if approved, the make-up test must be taken a **prior** to the scheduled test time. *A make-up exam after the scheduled test time will not be given under any circumstances.*

Final Exam: Final Exam is **cumulative** and will cover all material presented in class. Again, everyone must take the final exam. It will be held during the finals week at the time appointed by the university. Thus, do not make plans to leave BEFORE taking the final exam. The final exam date and time for this course are:

<p style="text-align:center">**May 04 (Wednesday)** from 1:00 - 3:00pm</p>

Grades: Your final grade in the class is "weighted" using the following percentages:
- 60% Tests (That is, 20% for each of the three tests)
- 15% Homework and Classwork
- 25% Final Exam

Grading Scale: A= [90, 100],   B = [80, 90),   C = [70-80),   D = [60-70),   F = [0,60)

Attendance Policy: Regular attendance is crucial to your success not only in the class but also for your future mathematics courses, if applicable. Please come on time and stay for the duration of the class. If you cannot attend regularly, on time, and stay for the entire class period, I highly recommend you take this class at another time that fits your schedule.

Important Dates:

Classes begin: Monday, Jan. 11
MLK Jr. Holiday: Monday, Jan. 18, 2016
Last day to withdraw with a grade of W: **Wednesday, Mar. 02**
Spring Break: Saturday-Friday, Apr. 02 – Apr. 08
Last day of classes: Monday, May 02

Withdrawal:

Students who find that they cannot continue in college for the entire semester after being enrolled, because of illness or any other reason, need to complete an online form. To completely or partially withdraw from classes at KSU, a student must withdraw online at www.kennesaw.edu, under Owl Express, Student Services.

The date the withdrawal is submitted online will be considered the official KSU withdrawal date which will be used in the calculation of any tuition refund or refund to Federal student aid and/or HOPE scholarship programs. It is advisable to print the final page of the withdrawal for your records. Withdrawals submitted online prior to midnight on the last day to withdraw without academic penalty will receive a "W" grade. Withdrawals after midnight will receive a "WF". Failure to complete the online

withdrawal process will produce no withdrawal from classes. Call the Registrar's Office at 770-423-6200 during business hours if assistance is needed.

Students may, by means of the same online withdrawal and with the approval of the university Dean, withdraw from individual courses while retaining other courses on their schedules. This option may be exercised up until **March 2, 2016**.

This is the date to withdraw without academic penalty for **Spring** Term, 20**16** classes. Failure to withdraw by the date above will mean that the student has elected to receive the final grade(s) earned in the course(s). The only exception to those withdrawal regulations will be for those instances that involve unusual and fully documented circumstances.

Note: *"Students are solely responsible for managing their enrollment status in a class; nonattendance does not constitute a withdrawal."*

Classroom Conduct:

A collaborative and respectful learning environment is expected and must be maintained. I expect you to come to class with a commitment to learn and to take responsibility for your learning. This includes participating in the discussions, taking notes, and helping others to learn. Also, please do not hesitate to ask questions.

You are responsible for conducting yourself in a manner that respects the right of the instructor as well as the others seeking to learn. Thus,

- **Cell phones need to be on mute (except in extenuating circumstances). When taking tests/final exam, all electronic devices must be turned off and put away.**
- **Please do NOT talk when the instructor is talking.**
- Please come to class prepared to participate.

You may be asked to LEAVE the room for misconduct or inappropriate behavior during class.

Academic Integrity:

Every KSU student is responsible for upholding the provisions of the Statement of Student Rights and Responsibilities, as published in the Undergraduate and Graduate Catalogs. Section II of the Statement of Student Rights and Responsibilities addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials,

misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards.

Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a **grade adjustment**, and/or a formal hearing procedure, which may subject a student to the Code of Conduct's minimal **one semester suspension** requirement.

* A student caught with academic misconduct will not have his/her lowest exam replaced with the final grade.

Students with Disabilities:

Any student with a documented disability or medical condition needing academic accommodations of class-related activities or schedules must contact the instructor immediately. Written verification from the KSU Student Disability Services (http://www.kennesaw.edu/stu_dev/dsss/welcome.html) is required. No requirements exist that accommodations be made prior to completion of this approved University documentation. All discussions will remain confidential.

Helpful Study Hints:

- Do not miss class, and fully focus on each lecture.
- Actively participate in group work. Do not let others do all the work for you.
- Complete your homework as soon as it is posted.
- Form a study group.
- Take advantage the free tutoring lab (SMART center).

Disclaimer:

The instructor reserves the right to make any changes to the syllabus, if necessary. In such events, students will be notified as early as possible, so any adjustments can be made to their schedules.